

CLAIMS

1. An inflatable, conformable, cushioning, multiple bubble strip, packaging product constructed for interposing between and in engagement with both the interior surfaces of a shipping container and the outer surfaces of one or more objects packaged within the shipping container and also constructed, when inflated, to reduce or to eliminate the transfer of shock loads from the shipping container to the objects packaged within the shipping container, said packaging product comprising,

a first sheet of film material,

a second sheet of film material,

said sheets having substantially equal lengths and substantially equal widths,

said sheets being joined together as a web in a pattern of seal lines,

said pattern of seal lines forming an inflation channel extending linearly along the length of the sheets for receiving pressurized air from an outlet end of an inflation tube disposed within the inflation channel at an inflation station as the sheets are transported past the sealing station in the process of inflating and sealing strips of multiple bubble cushioning structures in the packaging product,

said pattern of seal lines also forming a plurality of individual inflatable strips of multiple bubble cushioning structures extending laterally from said inflation channel,

each individual inflatable strip having a plurality of bubble chambers with each bubble chamber interconnected to an adjacent bubble chamber by an interconnecting passageway which is smaller in size and internal volume than the bubble chambers but

which is sufficiently large to enable air volume and pressure in one inflated bubble chamber to be transmitted to adjacent bubble chambers for distributing a shock load on one bubble chamber along the entire length of the individual inflatable strip of interconnected bubble chambers,

25 each individual inflatable strip of multiple bubble cushioning structures having an entrance port connecting the first bubble chamber in the strip to the inflation channel for receiving pressurized air at the inflation station to inflate all of the bubble chambers in the individual inflatable strip,

30 said entrance port being configured to permit the entrance port to be sealed by a line seal formed across the entrance port by a heated sealing element at a sealing station as the sheets of film material are continuously and uninterruptedly transported through the sealing station after the bubble chambers have been inflated at the inflation station, and

35 each individual inflatable strip being defined between two laterally extending spaced apart peripheral seal lines which have an undulating configuration free of corner shapes or sharp bends which could concentrate stresses.

2. The invention defined in claim 1 wherein said peripheral seal lines have a generally sinusoidal configuration as viewed from above the sheets.

3. The invention defined in claim 1 wherein the bubble chambers in one individual inflatable strip are laterally offset with respect to the bubble chambers in an immediately adjacent individual inflatable strip so that a bubble chamber in one inflatable strip is opposite an interconnecting passageway in an immediately adjacent inflatable strip.

4. The invention defined in claim 3 wherein a peripheral seal line on one side of a first individual inflatable strip is also a peripheral seal line for a second individual inflatable strip immediately adjacent said one side of the first individual inflatable strip.

5. The invention defined in claim 1 wherein the bubble chambers are sufficiently large that only a single layer of the inflated packaging product can provide the necessary cushioning for many objects.

6. The invention defined in claim 5 wherein the height of a bubble chamber when inflated is substantially 1 1/2 inches.

7. The invention defined in claim 1 wherein the inflation channel extends along one side edge of the web and each individual inflatable strip extends across substantially the entire width of the web.

8. The invention defined in claim 1 wherein the inflation channel extends along a center portion of the web and the individual inflatable strips extend laterally outwardly from the central inflation channel toward the peripheral side edges of the web.

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